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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,450	10/31/2003	Venkata A. Bhagavatula	SP02-275	2835
22928	7590	06/15/2005	EXAMINER	
CORNING INCORPORATED			ROJAS, OMAR R	
SP-TI-3-1				
CORNING, NY 14831			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/699,450

Applicant(s)

BHAGAVATULA ET AL.

Examiner

Omar Rojas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 18-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-17 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on October 31, 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0204,0604,0804.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: Detailed Action.

DETAILED ACTION

Information Disclosure Statement

1. The prior art documents submitted by applicant in the Information Disclosure Statement(s) filed on February 2, 2004; August 24, 2004; and June 18, 2004 have all been considered and made of record (note the attached copy of form(s) PTO-1449).

Specification

2. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Election/Restrictions

3. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-17, drawn to a fiber lens, classified in class 385, subclass 33.
- II. Claims 18-20, drawn to method of making a fiber lens, classified in class 65, subclass 387.

The inventions are distinct, each from the other because of the following reasons:

4. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the fiber lens as claimed could be made using adhesives instead of splicing.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

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6. During a telephone conversation with Jennifer Kazukiewicz on June 6, 2005 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-17. Affirmation of this election must be made by applicant in replying to this Office action. Claims 18-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102/103

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

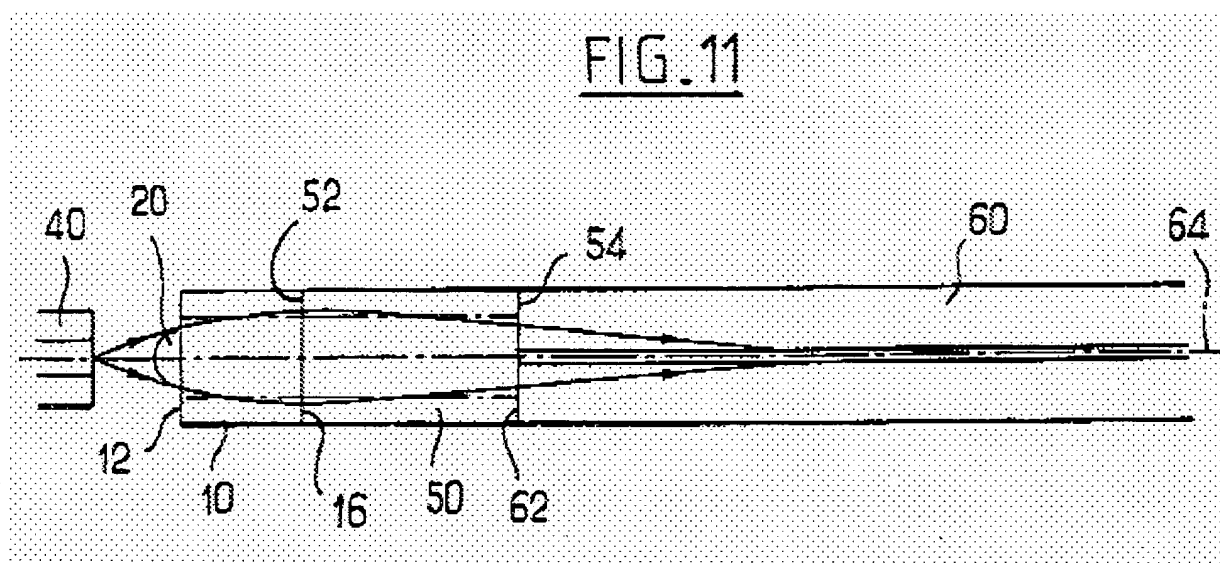
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-4 and 6-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Patent No. 5,638,471 to Semo et al. ("Semo"), provided by applicant(s) in the information disclosure statement.

Regarding claim 1, Semo discloses a fiber lens (e.g., see Figure 11), comprising:
a graded-index lens 50; a single-mode fiber 60 disposed at a first end of the graded-index lens 50; and a refractive lens 20 having a hyperbolic shape disposed at or near a second end of the graded-index lens ("GRIN") 50 to focus a beam from the single-mode fiber to a diffraction-limited spot. Figure 11 of Semo is reproduced below.



Regarding claim 2, see Figure 11 and col. 5, lines 15-25.

Regarding claim 3, it is noted that claim 3 is dependent upon base claim 1, which calls for either a hyperbolic shape or a near-hyperbolic shape (emphasis added). Thus, claim 3 incorporates by dependency the alternative language of claim 1 which requires either a refractive lens with a hyperbolic shape or a near-hyperbolic shape, but does not require both shapes. Therefore, because Semo teaches a lens 20 having a hyperbolic shape, Semo also anticipates claim 3.

Regarding claim 4, see Semo at column 5, lines 47-55.

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Regarding claims 6-7, see Semo at column 1, lines 50-54 and Figure 12 (suggesting a spot size of less than 5 microns).

Regarding claims 8-9, the claimed working distances are inherently achieved in Semo due to the use of GRIN lens 50. Alternatively, it would have been obvious under 35 U.S.C. 103 to achieve the claimed working distances by adjusting the length and/or diameter of the GRIN lens 50 in order to optimize the safety distance (col. 6, lines 17-18).

Regarding claim 10, the recited ratio is considered inherently present in Semo because Semo discloses the required structural elements of the base claim(s). Alternatively, it would have been obvious under 35 U.S.C. 103 to modify Semo to achieve the recited ratio of claim 10 by adjusting the design parameters of the lens 50 and/or refractive lens 20. As disclosed by applicant's specification, adjusting these design parameters was a matter of using well-known formulas and mathematical calculations (see the specification at paragraphs [0028] to [0033]).

Regarding claim 11, it is well-known that conventional graded index fibers have core diameters meeting the recited values. Thus, the limitations of claim 11 are considered inherent in Semo in view of the previous remarks concerning claim 1. Alternatively, it would have been obvious under 35 U.S.C. 103 to adjust the core diameter of the GRIN fiber 50 to meet the claimed limitation in order to optimize the propagation period (col. 5, ll. 15-18).

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Regarding claim 12, see Semo at column 6, lines 25-29.

Regarding claim 13, the claimed limitations are considered inherently present in Semo since they appear to include conventional values for graded-index lenses. Alternatively, it would have been obvious under 35 U.S.C. 103 to adjust the relative index difference of the GRIN fiber 50 of Semo to meet the recited limitation(s) in order to optimize the GRIN fiber pitch (col. 5, ll. 34-38).

Regarding claim 14, it is well-known that standard optical fibers generally operate in within a range of 250 to 2,000 nm. Thus, the limitations of claim 14 are considered inherently present in Semo in view of the previous remarks concerning claim 1.

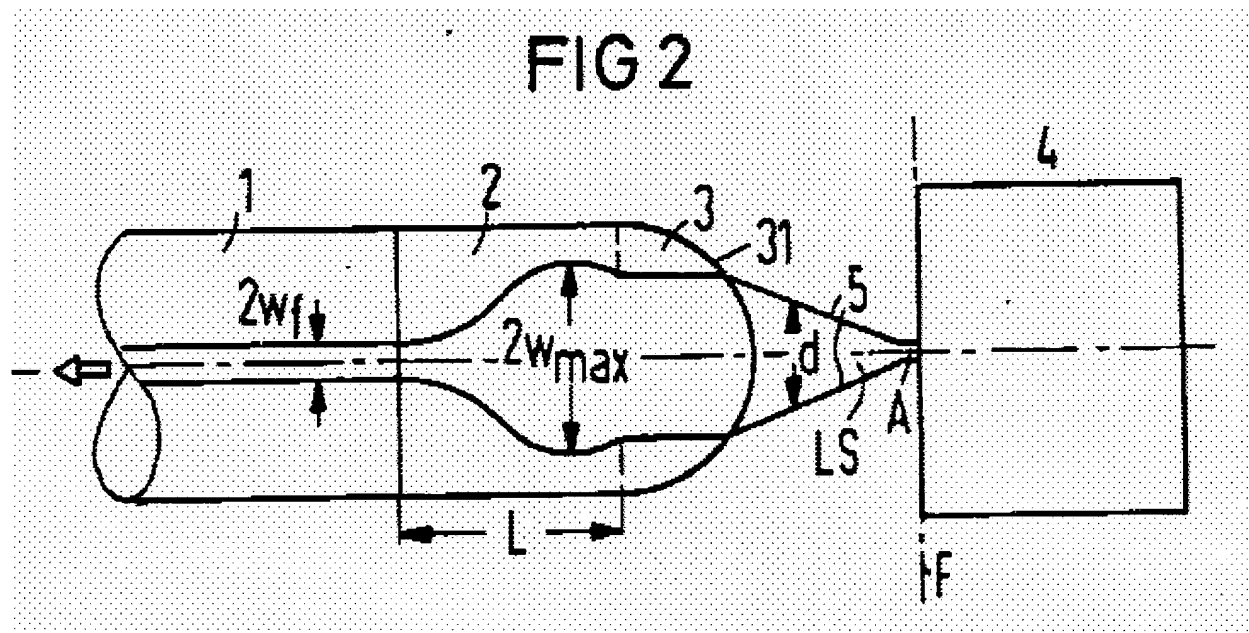
Regarding claims 15-17, see the previous remarks. Semo discloses or suggest the invention as claimed.

11. Claims 1, 2, and 6-16 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 0155379 A to Siemens AG (hereinafter "Siemens"), also provided by applicant(s) in an information disclosure statement.

It is noted that the Siemens references is published in a foreign language. An International Search Report for corresponding PCT application no. PCT/US03/39641 (provided in an information disclosure statement) indicates that claims 1, 2, and 6-16 are anticipated by Siemens. The Search Report is taken as *prima facie* evidence that claims 1, 2, and 6-16 are anticipated by Siemens under 35 U.S.C. 102(b). As shown in Figure 2 of Siemens, reproduced below, a fiber

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lens comprises: a graded-index lens 2; a single-mode fiber 1 disposed at a first end of the graded-index lens 2; and a refractive lens 3 having a hyperbolic shape disposed at a second end of the graded-index lens 2 to focus a beam from the single-mode fiber 1 to a diffraction-limited spot.



Allowable Subject Matter

12. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter:

The prior art, taken either alone or in combination(s), does not disclose or fairly suggest interposing a spacer rod between the graded-index lens and the single-mode fiber as recited by claim 5. Although Semo discloses the limitations of claim 4, it would not have been considered obvious to modify the location of the spacer fiber disclosed by Semo in the manner prescribed by claim 5.

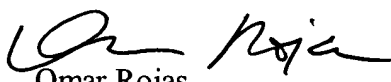
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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (571) 272-2357. The examiner can normally be reached on Monday-Friday (7:00AM-3:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick, can be reached on (571) 272-2344. The official facsimile number for regular and After Final communications is (703) 872-9306. The examiner's RightFAX number is (571) 273-2357.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Omar Rojas
Patent Examiner
Art Unit 2874

or
June 13, 2005